

and silver. The denarii of Otho are of not infrequent occurrence, notwithstanding the extremely short duration of his reign.

We cannot more appropriately conclude this sketch than with the words of the Spanish writer, Gussême :

*"No pretendo que la afición á las medallas sea la única ; pero sí que no se olvide, que no se abandone, antes sí que se cultive. Ella es de tal calidad, que siempre recrea, que ofrece a cada paso nuevas satisfacciones, y con una solidez, que no se halla con tanta frecuencia en los demas estudios. * * * La Erudicion debe ser en todos tiempos, y en todas Naciones apetecida y sollicitada ; y seguramente no hay modo para adquirirla con mayor extension que el uso de los medallas, el estudio para su perfecto conocimiento, y el manejo de los libros que tratan de ellas. Quien las cultiva va adquiriendo de grado en grado los mas utiles conocimientos, y una vasta extension en el campo de las bellas letras.*

*"Cada medalla es un diploma o instrumento autentico ; que comprueba la verdad de la Historia ; y no habrá en el mundo archivo de mas seguros y antiguos documentos. * * * * El estudio de la antigüedad es cosa que no debemos jamas olvidar y abandonar segun Claudiano ;*

Nec desinat unquam

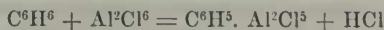
Tecum Graia loqui, tecum Romana vetustus."

On the Formation of Dibenzyl by the Action of Ethylene Chloride on Benzol in the Presence of Aluminium Chloride. By William H. Greene.

(Read at the Meeting of the American Philosophical Society, October 17, 1879.)

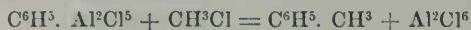
By a series of the most remarkable chemical investigations of late years, MM. Friedel and Crafts have shown that the radicles of the saturated hydrocarbons can be grafted upon the benzol nucleus by the action of aluminium chloride upon a mixture of benzol and the monatomic chlorides, bromides, etc. Thus, on passing methyl chloride into benzol in which aluminium chloride is suspended, all of the methyl derivatives of benzol, from toluol to hexamethyl benzol, may be formed, according to the proportions of benzol and methyl chloride which are brought into contact. In the same manner, the ethyl, propyl, and other derivatives of benzol may be obtained abundantly.

In these reactions, hydrochloric acid is disengaged, and the explanation proposed by Friedel and Crafts supposes the reaction to take place in two phases : In the first, a compound of benzol and aluminium chloride is formed, with elimination of hydrochloric acid.



In the second, the aluminium-benzol compound reacts upon the mona-

tomic chloride present, the organic radicle entering the benzol nucleus, and aluminium chloride being reformed.



A small quantity of aluminium chloride serves for the preparation of an indefinite quantity of the new hydrocarbon.

By the action of aluminium chloride on the monatomic chlorides alone, hydrochloric acid is also eliminated, and the radicle is condensed. Hence, the reaction which would take place between benzol and a polyatomic chloride under the same circumstances cannot be entirely foreseen. It seems possible that in the case of ethylene chloride, for example, both atoms of chlorine might be replaced by phenyl groups, but it would seem more probable that, after the first substitution, one molecule of hydrochloric acid would be removed from the ethylene chloride, and that a more condensed hydrocarbon, styrol, would be formed. However, the first reaction is that which actually occurs.

When aluminium chloride is introduced into a mixture of benzol and ethylene chloride, the reaction begins in the cold, and becomes energetic on the application of heat. Hydrochloric acid is disengaged abundantly; when the reaction has ceased, the mixture is thrown into water to separate the aluminium chloride, and the oily liquor which separates is heated with alcoholic potassium hydrate, in order to decompose any remaining ethylene chloride.

After washing and drying the product, it yields, on fractional distillation, very nearly the theoretical quantity of dibenzyl, after which a thick oily mixture remains, which does not completely distill at 200° in a vacuum. This mixture consists of condensation products, and yields no satisfactory results, as it cannot well be fractionated, and does not solidify in a freezing mixture.

Pure dibenzyl melts at 52.5–53°, and boils at 279°, under a pressure of 767 millimetres, the thermometer being entirely immersed in the vapor. This boiling point is lower than that given by Cannizarro and Rossi (284°), and higher than that indicated by Fittig (272°).

On Dioxyethyl-methylene, and the Preparation of Methylene chloride. By Wm. H. Greene, M.D.

(Read before the American Philosophical Society, November 21, 1879.)

With the exception of the diethyl ether of methylene glycol, all of the oxyethyl substitution compounds of methane have already been described. Orthoformic ether, $\text{CH}(\text{OC}^2\text{H}^5)^3$, was studied by Kay and Williamson, and is generally known as Kay's ether; orthocarbonic ether, $\text{C}(\text{OC}^2\text{H}^5)^4$, was discovered and described by H. Bassett; methyl-ethyl oxide has long been known.

By a reaction similar to that by which these ethers are formed, I have